REMARKS

Claims 1-28 are pending in this application. Claims 1, 6, 12, 15, 20, and 26 are independent claims. Reconsideration and allowance of the present application are respectfully requested.

Rejections under 35 U.S.C. §112

Claims 2, 3, 6, 9-10, 16, 17, 22 and 23-24 stand rejected under 35 USC § 112, second paragraph, as being indefinite. These rejections are respectfully traversed.

The Examiner contends the use of the terms "response request ID" and "card company ID number" are unclear.

Section 2111 of MPEP states:

> During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." >The Federal Circuit's *en banc* decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard:
>
> The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 CFR 1.75(d)(1).

Accordingly, claims are to be interpreted "in light of the specification as it would be interpreted by one of ordinary skill in the art" The Applicant's Specification describes the term "response request ID" in at least paragraph [0056] which recites:

> [0056] When the random number encrypted by the IC card based on the public key is sent to the electronic seal, the response request ID (identification) encrypted based on the public key is also sent. The electronic seal decodes the received response request ID based on the secret key. When the decoded response request ID matches the response request ID stored in the response request ID memory section, the electronic seal encrypts the decoded random number based on the secret key, and sends the resultant random number to the IC card. When the decoded response request ID does not match the response request ID stored in the response request ID memory section, the processing is terminated. Thus, the security level of authentication is further improved.

The Applicant's Specification describes the term "card company ID number" in at least paragraph [0057] which recites:

> [0057] The public key can be widely used by card companies and the like. The secret key of the electronic seal is stored for each card company ID number. Thus, a specific secret key can be specified from the card company ID number to be used. An electronic seal according to the present invention can perform authentication using a secret key cryptosystem as well as a public key cryptosystem.

Accordingly, the Applicant's specification provides a clear description of the terms "response request ID" and "card company ID number". Consequently, the terms "response request ID" and "card company ID" do "find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description" (37 CFR 1.75(d)(1)) and thus they meet the requirements for claim language set out in the MPEP and 37 CFR §1.75(d)(1).

Therefore, Applicants respectfully request that the rejections of claims 2, 3, 6, 9-10, 16, 17, 22 and 23-24 under 35 U.S.C. §112 be withdrawn.

Rejections under 35 U.S.C. §102 - *Azuma*

Claims 1, 4-7 and 11-14 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,704,608 ("Azuma"). This rejection is respectfully traversed.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Applicants respectfully submit that Azuma fails to teach each of the elements in claim 1 as is required to support a rejection under §102. Claim 1 recites "a decoding section for decoding the input random number **based on the secret key**; an encryption section for encrypting the decoded random number **based on the secret key**; and an output section for outputting the random number encrypted **based on the secret key**." (Emphasis added)

With respect to claim 1, the Examiner directs the Applicant's attention to the following text from Azuma: "The second terminal apparatus decrypts the numeral WM, using a **secret key**, encrypts it using a **public key** to obtain the numeral WN, and sends the numeral WN to the IC card" (Azuma col. 20, ln. 1-3). Azuma teaches decrypting a numeral with a public key and encrypting it with a private key. However, claim 1 claims both "a decoding section for decoding the input random number **based on the secret key**"; and "an encryption section for encrypting the decoded random number **based on the secret key**". Azuma does not teach encoding and decoding with the same key as is required by claim 1.

Additionally, Azuma does not teach an output section outputting the random number encrypted based on the **secret key**. On the contrary, Azuma teaches encrypting the numeral WM with a **public key** to obtain the numeral WN (Azuma col. 20, ln. 1-4).

Accordingly, Azuma fails to teach each of the elements in claim 1 as is required to support a rejection under 35 U.S.C. §102..

The Applicants respectfully submit that Azuma fails to teach each of the elements in claim 6. Claim 6 recites "an encryption section for encrypting the generated random number **based on the prescribed key**;" and "a decoding section for decoding the input random number **based on the prescribed key**;".

Azuma recites the following:

> The IC card generates a random number M, encrypts it using the public key Mb, and sends an encrypted numeral WM to the second terminal apparatus. The second terminal apparatus decrypts the numeral WM using a secret key, encrypts it using a public key to obtain a numeral WN, and sends the numeral WN to the IC card. The IC card receives from the second terminal apparatus the numeral WN, obtains a numeral N by decrypting the numeral WN, and judges whether the numeral n matches the numeral M. (Azuma col. 9, ln. 66 – col. 10, ln. 7)

Azuma discloses an IC card that both encrypts and decrypts a random number but, Azuma is silent as to whether or not the IC card both encrypts and decrypts the random number with the same key. Accordingly, Azuma fails to teach each of the elements in claim 6 as is required to support a rejection under 35 U.S.C. §102.

Claim 12 contains limitations similar to those of claims 1 and 6. For the reasons cited above, Azuma does not teach each of the elements in either of claims 1 and 6. Accordingly, at least by virtue of its similarity to claims 1 and 6, Azuma fails to teach each of the elements in claim 12 as is required to support a rejection under 35 U.S.C. §102.

Additionally, claims 4 and 5 depend from claim 1; claims 7 and 11 depend from claim 6; and claims 13 and 14 depend from claim 12. Accordingly, at least by virtue of their dependency from claims 1, 6 and 12, Azuma fails to teach each of the elements in any of claims 4, 5, 7, 11, 13 or 14 as is required to support a rejection under §102.

Therefore, Applicants respectfully request that this rejection of claims 1, 4-7 and 11-14 under 35 U.S.C. §102 be withdrawn.

Rejections Under 35 U.S.C. § 103 – *Azuma*

Claims 2 and 8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,704,608 ("Azuma"). This rejection is respectfully traversed.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The deficiencies of Azuma have been discussed above and are applicable here as well because claim 2 depends from claim 1 and claim 8 depends from claim 6. For the reasons stated above, Azuma fails to teach or suggest each of the limitations in either of claims 1 and 6. Accordingly, at least in view of their dependency from claims 1 and 6, Azuma fails to teach or suggest each of the limitations in either of claims 2 and 8. Consequently, the Examiner has not established a *prima facie* case of obviousness required to support a rejection under §103.

Therefore, Applicants respectfully request that this rejection of claims 2 and 8 under 35 U.S.C. §103 be withdrawn.

Rejections Under 35 U.S.C. § 103 – *Azuma in view of Reece*

Claims 3 and 9-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Azuma in view of U.S. Patent Publication No. 2003/0150915 ("Reece"). This rejection is respectfully traversed.

The deficiencies of Azuma have been discussed above and are applicable here as well because claim 3 depends from claim 1 and claims 9 and 10 depend from claim 6. For the reasons stated above, Azuma fails to teach each of the limitations in either of claims 1 and 6. Reece fails to remedy these deficiencies at least because Reece does not deal with encryption keys. Accordingly, at least in view of their dependency from claims 1 and 6, neither Azuma nor Reece alone or in combination teach or suggest each of the limitations in either of claims 2 and 8. Consequently, the Examiner has not established a *prima facie* case of obviousness as is required to support a rejection under §103.

Therefore, Applicants respectfully request that this rejection of claims 3 and 9-10 under 35 U.S.C. §103 be withdrawn.

Rejections Under 35 U.S.C. § 103 – *Azuma in view of Yu*

Claims 15, 18-19, 20-21, 24, and 25-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Azuma in view of U.S. Patent No. 6,067,621 ("Yu"). This rejection is respectfully traversed.

The deficiencies of Azuma have been discussed above and are applicable here as well because claim 15 contains limitations similar to those of claim 1, claim 20 contains limitations similar to those of claim 6, and claim 26 contains limitations similar those in both claims 1 and 6. For the reasons stated above, Azuma fails to teach each of the limitations in either of claims 1 and 6. Yu fails to remedy these deficiencies at least because Yu does not disclose decrypting and

encrypting a random number using the same key. Accordingly, at least in view of their similarity to claims 1 and 6, neither Azuma nor Yu alone or in combination teach each of the limitations in any of claims 15, 20 and 26. Consequently, the Examiner has not established a *prima facie* case of obviousness with respect to any of claims 15, 20 and 26 as is required to support a rejection under §103.

Additionally, claims 18 and 19 depend from claim 15; claims 21, 24 and 25 depend from claim 20; and claim 27 depends from claim 26. Consequently, the Examiner has not established a *prima facie* case of obviousness, as is required to support a rejection under §103, with respect to any of claims 18, 19, 12, 24, 25 or 27, at least in view of their dependency from claims 15, 20 and 26.

Therefore, Applicants respectfully request that this rejection of claims 15, 18-19, 20-21, 24, and 25-27under 35 U.S.C. §103 be withdrawn.

Rejections Under 35 U.S.C. § 103 – *Azuma in view of Yu and further in view of Reece*

Claims 17 and 23-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Azuma in view of Yu as applied to claim 15 and further in view of Reece. This rejection is respectfully traversed.

The deficiencies of Azuma, Reece and Yu have been discussed above and are applicable here as well because claim 17 depends from claim 15 and claims 23 and 24 depend from claim 20. For the reasons stated above, neither Azuma nor Yu, alone or in combination, teach each of the limitations in either of claims 15 and 20. Reece fails to remedy these deficiencies because Reece does not deal with encryption keys. Accordingly, at least in view of their dependency from claims 15 and 20, none of Azuma, Reece or Yu, alone or in combination, teach each of the limitations in any of claims 17, 23 and 24. Consequently, the Examiner has not established a

prima facie case of obviousness with respect to any of claims 17, 23 and 24 as is required to support a rejection under §103.

Therefore, Applicants respectfully request that this rejection of claims 17 and 23-24 under 35 U.S.C. §103 be withdrawn.

CONCLUSION

In view of the above remarks and amendments, Applicants respectfully submit that each of the rejections has been addressed and overcome, placing the present application in condition for allowance. A notice to that effect is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Donald J. Daley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,
HARNESS, DICKEY, & PIERCE, P.L.C.

By _____

Donald J. Daley, Reg. No. 34,313

P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

JHA
DJD:JHA:mat